



OPPT Chemical Fact Sheets

Butyraldehyde Fact Sheet (CAS No. 123-72-8)



Chemicals can be released to the environment as a result of their manufacture, processing, and use. EPA has developed information summaries on selected chemicals to describe how you might be exposed to these chemicals, how exposure to them might affect you and the environment, what happens to them in the environment, who regulates them, and whom to contact for additional information. EPA is committed to reducing environmental releases of chemicals through source reduction and other practices that reduce creation of pollutants.

WHAT IS BUTYRALDEHYDE, HOW IS IT USED, AND HOW MIGHT I BE EXPOSED?

Butyraldehyde (also called butanal) is a colorless, flammable liquid. It occurs naturally in several plants and foods. Microorganisms release it as they break down organic material. Butyraldehyde is produced in very large amounts (almost 2 billion pounds in 1992) by five companies in the United States. U.S. demand for butyraldehyde is likely to remain steady for the next several years. The largest users of butyraldehyde are companies that make rubber accelerators, synthetic resins, solvents, plasticizers, and high molecular weight polymers.

Exposure to butyraldehyde can occur in the workplace or in the environment following releases to air, water, land, or groundwater. Exposure can also occur when people eat certain foods, such as cheese, wine, and honey, and when they breathe air contaminated with diesel exhaust. Butyraldehyde enters the body when people breathe air or consume water or food contaminated with butyraldehyde. It does not remain in the body due to its breakdown and removal.

WHAT HAPPENS TO BUTYRALDEHYDE IN THE ENVIRONMENT?

Butyraldehyde evaporates when exposed to air. It dissolves when mixed with water. Most releases of butyraldehyde to the environment are to air or into underground injection sites. It evaporates from water and soil exposed to air. Once in air, it breaks down to other chemicals. Microorganisms that live in water and in soil can also break down butyraldehyde. Because it is a liquid that does not bind well to soil, butyraldehyde that makes its way into the ground can move through the ground and enter groundwater. Plants and animals are not likely to store butyraldehyde.

HOW DOES BUTYRALDEHYDE AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of butyraldehyde on human health and the environment depend on how much butyraldehyde is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

Exposure to butyraldehyde liquid for short periods of time damages the eyes. Exposure to butyraldehyde liquid irritates the skin. Studies show that exposure to large amounts of butyraldehyde in air causes anesthesia in animals. These effects are not likely to occur at levels of butyraldehyde that are normally found in the environment.

Human health effects associated with breathing or otherwise consuming small amounts of butyraldehyde over long periods of time are not known. Laboratory studies show that repeated exposure to large amounts of butyraldehyde in air can adversely affect the lining of the nose and the lungs of animals. Laboratory studies show that repeated oral exposure to large amounts of butyraldehyde can adversely affect the stomach. Limited evidence shows that butyraldehyde may also cause changes in cells important to the reproductive system of animals. Whether these changes affect the ability of animals to reproduce is not known.

Butyraldehyde has moderate toxicity to aquatic life. By itself it is not likely to cause environmental harm at levels normally found in the environment. Butyraldehyde can contribute to the formation of photochemical smog when it reacts with other volatile substances in air.

WHAT EPA OFFICES OR OTHER FEDERAL AGENCIES OR OTHER GROUPS CAN I CONTACT FOR ADDITIONAL INFORMATION ON BUTYRALDEHYDE?

EPA OFFICE	LAW	PHONE NUMBER
Pollution Prevention & Toxics	Emergency Planning and Community Right-to-Know Act (EPCRA) (§ 313/ Toxics Release Inventory data)	(202) 260-1531
	Toxic Substances Control Act (TSCA) (§8A, 8D)	(202) 554-1404
Air	Clean Air Act (§111, §112B)	(919) 541-0888

For general information on reducing or eliminating industrial pollutants through technology transfer, education, and public awareness, contact the Pollution Prevention Information Clearinghouse, (202) 260-1023.

OTHER FEDERAL AGENCY/DEPARTMENT OR GROUP	PHONE NUMBER
American Industrial Hygiene Association	(703) 849-8888
Consumer Product Safety Commission	(301) 504-0994
Food and Drug Administration	(301) 443-3170
National Institute of Environmental Health Sciences (EnviroHealth Clearinghouse)	(800) 643-4794

The Support Document for this and other OPPT Chemical Fact Sheets can be found on the Internet at:
<http://www.epa.gov/chemfact>